



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,824	07/10/2003	Hans-Peter Manner	SMB-PT082 (P 03 305 M US)	2688
3624	7590	12/30/2005	EXAMINER	
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			EWALD, MARIA VERONICA	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/616,824	<b>Applicant(s)</b> MANNER, HANS-PETER	
	<b>Examiner</b> Maria Veronica D. Ewald	<b>Art Unit</b> 1722	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 – 3, 5 – 7, 9 – 10, 14 – 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Babin (U.S. 6,162,044). With respect to claim 1, Babin teaches an injection nozzle (item 12 – figure 2) for plastic comprising at least two outlet openings (item 104 – figure 2) in an end region of the injection molding nozzle, directed towards different sides of the nozzle (column 2, lines 63 – 65), for discharging to different sprue openings (item 144 – figure 2), each of the outlet openings including a needle closure with a closure needle adjustable in a direction of one of the outlet openings (item 114 – figure 2; column 3, lines 30 – 31) ; a common drive element for displacing the closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and the drive element including a cross section that is at least one of a cone, conical, tapered, a cam disk and an eccentric disk (column 3, lines 1 – 10) and a feed channel for transporting plastic to the outlet openings (item 50 – figure 2).

With respect to claims 2 and 3, Babin further teaches that the feed channel (item 50 – figure 2) comprises a separate feed channel (item 118 – figure 2) for the plastic for

Art Unit: 1722

each of the lateral outlet openings provided with a closure needle and the feed channels are arranged outside a middle area of the injection molding nozzle (column 3, lines 40 – 42). The reference further teaches that the feed channels for the plastic entering the outlet openings are before mouths thereof, near ends of the individual closure needles (items 114, and 118 – figure 2).

With respect to claims 5 – 7, Babin teaches that the closure needles of the outlet openings have a common drive for displacement into the closing position (column 2, lines 66 – 67; column 3, lines 1 – 9). In addition, the reference teaches that the closure needles in a closing direction, have a cross section enlargement or a shoulder located before the feed channel entry (column 3, lines 30 – 31) for the plastic as an action surface for injection molding pressure for opening the closure needle, and the drive acting in the closing direction can be disconnected and/or overcome during opening of the respective closure needle (column 3, lines 5 – 10). Furthermore, Babin teaches that the injection nozzle has compression springs or displacement means engaging mechanically on the closure needles and are provided for displacing the closure needles into the closing position and are located at ends remote from the outlet opening.

With respect to claims 9 – 10, Babin teaches that the injection nozzle is further comprised of a push/pull rod displaceable in an axial direction is located centrally within the injection molding nozzle or for rotating a cam disk or eccentric disk, a rotary rod is provided centrally in the injection molding nozzle (item 62 – figure 1; column 3, lines 3 – 5). Furthermore, the reference teaches that the drive element engaging the closure

Art Unit: 1722

needles is coupled and connected with the closure needles such that one movement serves for closing and an opposite movement serves for pulling back the closure needles into an opening position (column 3, lines 1 – 9).

With respect to claims 14 – 18, Babin teaches that a rod, arranged in a center of the nozzle housing (14) for a common drive of the closure needles is provided or coupled with a rotary or axial drive (column 2, lines 66 – 67; column 3, lines 1 – 9). The reference further teaches that the outlet openings and the closure needles displaceable therein are arranged in bushings inserted into a housing of the injection molding nozzle (item 100 – figure 2; column 3, lines 18 – 22). In addition, the nozzle is further comprised of at least one retaining cap removably threadably secured to an outside of the injection molding nozzle which retains at least one of the closure needles, the retaining cap including a mouth of the outlet opening (item 124 – figure 2; column 4, lines 4 – 10); and a bushing which receives the closure needles in the nozzle body (item 100 – figure 2; column 3, lines 18 – 20, 33 – 35) and at least one of the closure needles includes a shoulder or a cross section enlargement which limits movement of the at least one of the closure needles in an axial direction (column 3, lines 44 – 45, 53 – 57), Furthermore, Babin teaches that injection molding nozzle has more than two outlet openings with closure needles displaceable therein (column 2, lines 63 – 65) which are arranged on one nozzle housing (column 2, lines 64 – 65) and are movable in the closing direction with the same drive element (column 2, lines 66 – 67; column 3, lines 1 – 3).

With respect to claims 19 – 22, Babin teaches that the injection molding nozzle is comprised of first and second openings in an end region of the injection molding nozzle directed towards different sides of the nozzle for discharging to different sprue openings (item 144 – figure 2; column 2, lines 63 – 65); first and second closure needles (item 114 – figure 2); the first closure needle positioned in the first opening and the second closure needle positioned in the second opening (items 112, 114 – figure 2); a common drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to an end of each of the first and second closure needles (column 3, lines 1 – 10); and a feed channel for transporting plastic to the outlet openings (item 50 – figure 2); and wherein a push/pull rod is connected to the displacement member for actuating the displacement member (item 62 – figure 1; column 3, lines 3 – 5); and wherein a rotary rod is connected to the displacement member for actuating the displacement member (item 62 – figure 1; column 3, lines 3 – 5); and furthermore, Babin teaches an injection molding nozzle with first and second openings (item 64 – figure 2) in an end region of the injection molding nozzle for discharging to different sprue openings; first and second closure needles (items 112, 114 – figure 2), the first closure needle positioned in the first opening and the second closure needle positioned in the second opening; a common drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to each of the first and second closure needles (column 3, lines 1 –

Art Unit: 1722

10); and a feed channel for transporting plastic to the outlet openings (item 50 – figure 2).

Claims 19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Guenther (EP0447573). In the cited patent abstract, Guenther teaches an injection nozzle for plastic comprising injection molding nozzle is comprised of first and second openings in an end region of the injection molding nozzle directed towards different sides of the nozzle for discharging to different sprue openings (item 68 – figure 1); first and second closure needles; the first closure needle positioned in the first opening and the second closure needle positioned in the second opening (item 50 – figure 1), a common drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to an end of each of the first and second closure needles (item 62 – figure 1); and a feed channel for transporting plastic to the outlet openings (item 22 – figure 2); and furthermore, Guenther teaches an injection molding nozzle with first and second openings in an end region of the injection molding nozzle for discharging to different sprue openings; first and second closure needles (item 62 – figure 1), the first closure needle positioned in the first opening and the second closure needle positioned in the second opening; a common drive element for displacing the first and second closure needles in a closing direction, the drive element being a displacement member movable between ends of the closure needles and slideably connected to each of the first and second closure needles (item 62 – figure 1); and a feed channel for transporting plastic to the outlet openings (item 22 – figure 1).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babin in view of Halbach (U.S. 2,471,683). Babin teaches the characteristics previously described but does not teach that the outlet openings are arranged radially.

In an injection molding apparatus with improved multiple nozzles, Halbach teaches that there is a die plate with a plurality of suitably-spaced nozzle-receiving apertures (column 2, lines 41 – 42). There is a single source or central injection passage for supplying molten material under pressure and has pivotally connected or swiveled to it, a head, having laterally extending branches and provided with integral nozzles and extending at right angles thereto through the apertures (column 3, lines 5 – 10). This reads on the Applicant's claim that the outlet openings are arranged approximately radially and generally in one plane extending perpendicularly to a longitudinal mid-axis of the injection molding nozzle. Halbach further teaches that the branched configuration has the advantages of enabling the mold to be filled more quickly, completely and uniformly, thus, producing a product with greater uniformity (column 1, lines 14 – 18). In addition, the reference teaches that the branched configuration minimizes heat loss and maintains fluidity of the molten material (column 2, lines 24, 33 – 35).



It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the injection molding apparatus of Babin with the branched passageways of Halbach for the purpose of filling the mold quickly while at the same time maintaining the fluidity of the molten material and producing a more uniform product.

Claims 11 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babin in view of Anderson (U.S. 4,662,837). Babin teaches the characteristics previously described but does not teach that the injection nozzle have a thermal gap.

In an injection molding apparatus, Anderson teaches a die assembly with an injection nozzle for delivering molten resin through the die cavity (column 2, lines 36 – 39). Molten plastic material travels through an injection conduit (item 11 – figure 1) and branches at right angles into a main manifold channel (item 13 – figure 1) and then to injection nozzles (item 16 – figure 1; column 3, lines 51 – 53). Anderson further teaches that there is a gap (item 43 – figure 5) into which thermal expansion of the nozzle can occur (column 4, lines 48 – 49). This expansion gap exists between the second component and the nozzle (column 5, lines 18 – 19). This reads on the Applicant's claim that the injection molding nozzle be further comprised of a thermal expansion gap in the region of the housing division and is sealed by an overlap at least in a region of the feed channels. The reference also teaches that the overlap is formed by sliding sleeves or a respective sliding sleeve arranged on an inside or outside of the feed channel (item 40 – figure 5; column 5, lines 37 – 42).

It would have been obvious at the time of the Applicant's invention to one of ordinary skill in the art to modify the injection molding apparatus of Babin with the expansion gap of Anderson for the purpose of providing space for the nozzle to expand which occurs as the assembly reaches the operating temperature (column 5, lines 28 – 29).

### ***Response to Arguments***

15. Applicant's arguments filed on October 6, 2005 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., *the closure needles directed towards different sides of the mold cavity*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant has argued that the reference of Babin does not teach openings on different sides of the molding apparatus. Examiner agrees; however, as written, claim 1 *states different sides of the nozzle not different sides of the mold apparatus or cavity* and thus, Babin shows an opening, which splits into two openings located on opposing or different sides the nozzle. In addition, Applicant has argued that Babin fails to teach a common drive element (of one of at least cone, conical, tapered, cam or eccentric disk) movable between the ends of the closure needles. Examiner disagrees. Babin shows a common drive element, which consists of a hydraulic actuating mechanism for the valve pins

Art Unit: 1722

(column 3, lines 1 – 5). The cross section of the piston, as shown in figure 2 *tapers* from the enlarged head to a narrower portion. Furthermore, though the piston is movable and attached to and between the upper ends of the closure needles, the needles are still situated such that they are on opposite sides of the piston, thereby, the piston is movable between the two, and displaces the closure needles in a closing direction – the only different being, as the piston is actuated vertically, the valve pins are also displaced in the same direction vertically. As written, claim 1 does not specify *which ends* the displacement member is attached, only that the displacement member is movable between ends.

Applicant also argues that Halbach fails to teach nozzle openings on different sides; however, Examiner disagrees. Halbach teaches two openings split perpendicular from one channel (item 17 – figure 1), and thus the openings are on *different sides* of the nozzle. Applicant also argues that Halbach fails to teach a common drive element; however, Examiner is only citing Halbach for the perpendicular openings, and thus, claim 4 remains rejected. Similarly, Applicant argues that the reference of Anderson does not show a nozzle with two openings and a common drive element; however, Applicant is only citing the reference of Anderson for the added feature of the thermal gap, and thus, claims 11 – 13 remain rejected.

Applicant has also argued that newly-added claims 19 and 22 overcome the prior art references, but the reference of Babin has been applied to reject both claims and dependent claims 20 and 21. Similarly, the reference of Guenther has also been applied to reject claims 19 and 22. Guenther teaches a nozzle with two openings disposed on

different sides *with closure needles*, since the reference states that a core element can be moved longitudinally in the runners (items 22 *and* 24), which includes both the main runner and the side runners. Furthermore, plungers (item 50) can be in both the "main runner *and/or* side runners", and thus, Guenther teaches closure needles in both the first and second nozzle openings. Furthermore, though not shown, it is obvious that the reference of Guenther includes a drive element to move the needles (i.e, core or plungers) in both the main and/side runners. There must be a drive element allowing such components to be advanced longitudinally. Furthermore, the core (item 62) in the main runner can also serve as the common drive element, since as it moves downwards (as shown by the arrows), it is capable of being slidably connected to the core(s) in the side runners, and thus, drives the core(s) in the side runners into a closed position.

### ***Conclusion***

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1722

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MVE

Joseph S Del Sole  
12/27/05  
Joseph S. Del Sole